Abstract of the Disclosure

The present invention is a 2 passenger aircraft capable of vertical and conventional takeoffs and landings, called a jyrodyne. The jyrodyne comprises a central fuselage with biplane-type wings arranged in a negative stagger arrangement, a horizontal ducted fan inlet shroud located at the center of gravity in the top biplane wing , a rotor mounted in the shroud, outrigger wing support landing gear, a forward mounted canard wing and passenger compartment, a multiple vane-type air deflector system for control and stability in VTOL mode, a separate tractor propulsion system for forward flight, and a full-span T-tail. Wingtip extensions on the two main wings extend aft to attach to the T-tail. The powerplants consist of two four cylinder two-stroke reciprocating internal combustion engines. Power from the engines is distributed between the ducted fan and tractor propeller through the use of a drivetrain incorporating two pneumatic clutches, controlled by an automotive style footpedal to the left of the rudder pedals. When depressed, power is transmitted to the ducted fan for vertical lift. When released, power is transmitted to the tractor propeller for forward flight. The aircraft can also takeoff and land in the conventional manner with a much larger payload, and is easily converted to amphibious usage. Landing gear is a bicycle arrangement with outriggers. The aircraft combines twin engines, heavy-duty landing gear, controlled-collapse crashworthy seats with a low stall speed and high resistance to stalls to eliminate any region of the flight regime where an engine or drivetrain failure could cause an uncontrollable crash.